

REMARKS

All remaining claims 1, 2, 5, 7 and 9 in the submitted RCE application have been amended to overcome further rejection under 35USC112, first paragraph, as well as patentably distinguish the now claimed final article from that either disclosed or obviously suggested in the sole Gibson et al reference (H1261) formerly being relied upon by the Examiner. Regarding the 112 rejection, the presently amended claims are devoid of reciting "adherence agents" as well as "introducing thermally residual stress" in the now claimed final product. All of said amended claims have also now been further limited to the specific FIG. 1 embodiment described in the filed application.

Further rejection of remaining claims 1, 3 and 5 under 35USC102 based on the Gibson et al reference is respectfully deemed in error by reason of expected performance differences in the Gibson et al final product. Gibson et al forms the entire final product on a heated mandrel (10) by first depositing a molten gas barrier polymer on said mandrel and thereafter deposits successive layers of molten polymer containing reinforcement fiber on the already deposited gas barrier layer. In doing so, both internal and external heating of deposited polymers is said to be maintained (col 3, lines 48-53) "to avoid thermally induced strain in the consolidated structure". It is well recognized, however, that such continued melting of thermoplastic polymers often reduces both physical and chemical characteristics desired in products made therefrom. Thus, some loss of mechanical strength can be expected upon melting while further subjecting the molten polymer to thermal degradation. A declaration accompanying the present amendment from a recognized expert in the art of polymer thermoforming provides additional support for these conclusions.

As distinct therefrom the now claimed final article is formed with far less heating of the polymers involved. Said final article experiences only limited external heating after the reinforcement fiber has been applied and with the underlying pipe length(s) being continuously moved during said heating procedure. Since the pipe length(s) remain unheated until after the reinforcement fibers have been applied, it can further be expected that the original physical and chemical

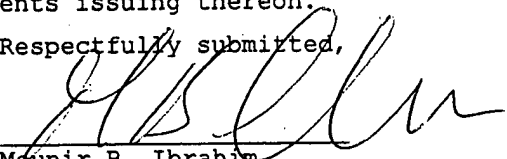
properties in said member(s) will remain substantially the same.

Still further rejection of claims 7 and 9 under 35USC103 based on the same reference can also not be agreed with. It is respectfully submitted that said reference does not obviously suggest the multiple fiber reinforced thermoplastic pipe members recited in the presently amended claims by reason of the above mentioned differences in pipe construction. Moreover, said reference pertains only to fabrication of a single reinforced pipe member as distinct from continuous reinforcement of multiple pipe lengths after being joined together. That only single member construction is either disclosed or obviously suggested in said reference is clearly evident from a need to remove said continuously heated mandrel after forming the single member thereon. It understandably follows therefrom that said reference procedure is necessarily limited to a batch type operation as distinct from the continuous mode of operation recited in the presently amended claims and thereby experiencing higher labor costs accompanied by expected inferior physical and chemical characteristics in the final product.

It can only be reasonably concluded from the above specified structural differences existing for the now claimed final article recited in all remaining claims 1, 3, 5, 7 and 9 that further rejection of all said claims under either 35USC102 or 35USC103 should not further be maintained. It could only be from unpermitted hindsight of the present applicant's own discovery that a skilled artisan would conclude from reading Gibson et al that an already existing hollow thermoplastic pipe length as well as multiple pipe lengths having said construction can be suitably fiber reinforced in a far less complex manner that does not require continuous heating of the entire composite article on a heated mandrel. As further evidenced in the accompanying declaration, one skilled in the fiber reinforcement of thermoplastic pipe constructions would not obviously consider from reading Gibson et al that having the reinforcement simply bonded to the outer surface of the already fabricated thermoplastic pipe member in a far more simplified manner could produce an unexpectedly superior final product. Such conclusion in the accompanying declaration and reached by an acknowledged expert in this same art should itself be regarded

be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the pending application or any patents issuing thereon.

Respectfully submitted,



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